Empirical and Numerical Techniques for Analyzing Wave Processes at Coastal Inlets and Structures

U.S. Army Corps of Engineers

Coastal Inlets Research Program

***8th* Annual Technology-Transfer Workshop**

January 22 –24, 2007, Fort Lauderdale, Florida

In cooperation with

Florida Shore and Beach Preservation Association

National Conference on Beach Preservation Technology, January 27, 2007

Monday, January 22, 2007

	Empirical and Numerical techniques for Analyzing Wave Processes at Coastal Inlets and Structures
8:00 - 9:00	Registration, Welcome, Logistics, Load software
9:00 – 9:45	Overview: **Progression of CIRP-Coastal Modeling System (CMS) Workshops** Topics, Outline, and Expectations Overview of technology and near future plans (Hughes, Melby, Demirbilek, & Michalsen)
9:45 – 10:00	**Break**
10:00 - 11:00	Lecture #1: **Structure Design in the Framework of the National Economic Development Plan** Analysis of Project Alternatives Design Components and Tools Data Needs (Melby)
11:00 -12:00	Lecture #2: **Empirical Coastal Structure Design Methodologies** Estimating Wave Runup and Overtopping Rubble-Mound Structure Stability Forces on Vertical Walls (Hughes)
12:00 – 13:00	**Lunch**
13:00 – 14:00	Lecture #3: **Recently Published Structure Design Guidance – Part I** New Developments in Structure Stability, Wave Runup, and Wave Overtopping Other New Design Guidance Example Applications of Design Guidance (Hughes)
14:00 – 15:00	Lecture #4: **Recently Published Structure Design Guidance – Part II** Design of Low-Crested Structures Design of Berm Breakwaters Example Applications of Design Guidance (Hughes)
15:00 – 15:15	**Break**
15:15-16:00	Lecture #5: **Principles of Lifecycle Analysis for Structure Design** Requirements for Lifecycle Analysis Overview of Available Tools and Techniques Application Guidelines (Melby)
16:00 – 17:00	Lecture #6: **Lifecycle Analysis Case Studies** Poplar Island Dredge Disposal Facility Neah Bay Navigation Project (Melby)
17:00	**Adjourn**

Tuesday, January 23, 2007

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8:00-9:30	Lecture #1:
	Wave Modeling at Inlets and Structures
	  Needs
	  Inlet Wave Models
	  Boussinesq Model
	(Demirbilek & Nwogu)

9:30 – 9:45	**Break**

9:45 - 11:00	Lecture #2:
	BOUSS-2D
	  Background
	  Theory & Numerics
	  Documentation
	(Nwogu & Demirbilek)

11:00 -12:00	Lecture #3:
	Surfacewater Modeling System (SMS)
	  BOUSS-2D Interface
	  Model I/O Files
	   Example: Model Setup
	 (Demirbilek)

12:00 – 13:00	**Lunch**
13:00 – 15:00	Lecture #4: **Example 1: General Application** (Nwogu & Demirbilek)
15:00 – 15:15	**Break**
15:15 – 17:00	Lecture #4: **Example 2: Inlet Application** (Michalsen & Demirbilek)
17:00	**Adjourn**

Wednesday, January 24, 2007

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8:00-9:00	Lecture #1: **Wave Modeling at the Mouth of Columbia River (MCR)** 　Engineering Issues 　Application Examples (Demirbilek & Nwogu)
9:00 – 9:15	**Break**
9:15 - 11:00	Lecture #2: **Wave Modeling at the MCR** 　District Studies 　BOUSS-2D Applications (Michalsen & Demirbilek)
11:00 -12:00	Lecture #3: **Closure** 　Questions/Answers 　Course Evaluation (Demirbilek, Hughes, Melby, Michalsen, Nwogu)
12:00	**Adjourn**

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